WEST Search History

DATE: Tuesday, June 24, 2003

Set Name side by side	Query	Hit Count	Set Name result set
DB=USPT,PGPB,JPAB,EPAB,DWPI,TDBD; PLUR=YES; OP=OR			
L11	l2 and l6	4	L11
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L10	5863677.pn.	1	L10
L9	5965327.pn.	1	L9
L8	6094256.pn.	1	L8
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L7	6558881	2	L7
L6	l3 and l5	6	L6
L5	angle adj4 (60 or 120)	28542	L5
L4	l1 and l2 and l3	19	L4
L3	photon$4 adj4 lattice$	192	L3
L2	rods	1062232	L2
L1	hexagon$3	95369	L1

END OF SEARCH HISTORY

L5 ANSWER 2 OF 3 INSPEC COPYRIGHT 2003 IEE
AN 1997:5534821 INSPEC DN A9709-4255P-009; B9705-4320J-021
TI Photopumped laser operation of an oxide post GaAs-AlAs superlattice **photonic lattice**.
AU Evans, P.W.; Wierer, J.J.; Holonyak, N., Jr. (Mater. Res. Lab., Illinois Univ., Urbana, IL, USA)
SO Applied Physics Letters (3 March 1997) vol.70, no.9, p.1119-21. 4 refs.
Doc. No.: S0003-6951(97)01009-7
Published by: AIP
Price: CCCC 0003-6951/97/70(9)1119(3)$10.00
CODEN: APPLAB ISSN: 0003-6951
SICI: 0003-6951(19970303)70:9L.1119:PLOO;1-C

DATE O.K.

DT Journal
TC Experimental
CY United States
LA English
AB Data are presented on the laser operation of photoexcited active **hexagonal photonic lattices** consisting of a GaAs-AlAs superlattice slab waveguide patterned with Zn-disordered AlGaAs posts that are converted to oxide. The semiconductor-oxide-post **photonic lattice** structure lases without the benefit of cleaved edges or other reflecting interfaces owing to strong local optical feedback provided by the high refractive index contrast between oxide posts and the active GaAs-AlAs superlattice. As the pump area is increased at constant pump power, the threshold intensity decreases as higher Q modes in an effectively larger cavity are excited. Similar **hexagonal photonic lattices** with nonoxidized posts (disordered AlGaAs posts) operate as lasers, but only with the assistance of cleaved edges and by shifting to longer wavelength. The oxide post **photonic lattice** is compatible with current-driven **photonic lattice** lasers or active filters.
CC A4255P Lasing action in semiconductors; A7865J Optical properties of nonmetallic thin films; B4320J Semiconductor lasers; B2530C Semiconductor superlattices, quantum wells and related structures
CT ALUMINIUM COMPOUNDS; GALLIUM ARSENIDE; III-V SEMICONDUCTORS; LASER FEEDBACK; OPTICAL PUMPING; PHOTONIC BAND GAP; QUANTUM WELL LASERS; REFRACTIVE INDEX; SEMICONDUCTOR SUPERLATTICES; WAVEGUIDE LASERS
ST **oxide post GaAs-AlAs superlattice photonic lattice**; photopumped laser operation; **photoexcited active hexagonal photonic lattices** ; GaAs-AlAs superlattice slab waveguide; Zn-disordered AlGaAs posts; **semiconductor-oxide-post photonic lattice structure**; strong local optical feedback pro; high refractive index contrast; pump area; constant pump power; threshold intensity; higher Q modes; effectively larger cavity; **hexagonal photonic lattices**; nonoxidized posts; disordered AlGaAs posts; cleaved edges; longer wavelengt; **oxide post photonic lattice**; GaAs-AlAs; AlGaAs:Zn
CHI GaAs-AlAs int, AlAs int, GaAs int, Al int, As int, Ga int, AlAs bin, GaAs bin, Al bin, As bin, Ga bin; AlGaAs:Zn int, AlGaAs int, Al int, As int, Ga int, Zn int, AlGaAs:Zn ss, AlGaAs ss, Al ss, As ss, Ga ss, Zn ss, Zn el, Zn dop
ET Al*As*Ga; Al sy 3; sy 3; As sy 3; Ga sy 3; GaAs; Ga cp; cp; As cp; AlAs; Al cp; GaAs-AlAs; Zn; AlGaAs; V; Al*As*Ga*Zn; Al sy 4; sy 4; As sy 4; Ga sy 4; Zn sy 4; AlGaAs:Zn; Zn doping; doped materials; Al*As; Al sy 2; sy 2; As sy 2; As*Ga; Ga sy 2; Al; As; Ga

L5 ANSWER 3 OF 3 INSPEC COPYRIGHT 2003 IEE
AN 1993:4317869 INSPEC DN A9304-7820D-003
TI Photonic band gaps in two-dimensional square and **hexagonal lattices**.
AU Villeneuve, P.R.; Piche, M. (Dept. de Phys., Laval Univ., Que., Canada)
SO Physical Review B (Condensed Matter) (15 Aug. 1992) vol.46, no.8, p.4969-72. 13 refs.

CODEN: PRBMDO ISSN: 0163-1829
DT Journal
TC Theoretical
CY United States
LA English
AB Two-dimensional square and **hexagonal lattices** exhibit **photonic** band gaps common to s- and p- polarized waves. These gaps occur from an overlap of the gaps between the first and second p bands and higher s bands. A dielectric structure with a hexagonal lattice of air holes requires a lower index contrast to generate a band gap and gives rise to larger gaps than a square lattice. Furthermore, square and **hexagonal lattices** of dielectric rods in air do not give rise to band gaps even when asymmetry is introduced to lift the degeneracies.
CC A7820D Optical constants and parameters
CT ENERGY GAP; OPTICAL CONSTANTS
ST photonic band gaps; 2D square lattices; **2D hexagonal lattices**; polarized waves; p bands; s bands; dielectric structure; dielectric rods; degeneracies
ET D

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L6 ANSWER 1 OF 3 CA
AN 136:61145 CA
TI Effects of shapes and orientations of scatterers and lattice symmetries on the photonic band gap in two-dimensional photonic crystals
AU Wang, Rongzhou; Wang, Xue-Hua; Gu, Ben-Yuan; Yang, Guo-Zhen
CS Institute of Physics, Chinese Academy of Science, Beijing, 100080, Peop. Rep. China
SO Journal of Applied Physics (2001), 90(9), 4307-4313
CODEN: JAPIAU; ISSN: 0021-8979
PB American Institute of Physics
DT Journal
LA English
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
AB The photonic band structures of 2-dimensional photonic crystals consisting of lattices with different symmetries and scatterers of various shapes, orientations, and sizes are studied numerically. Specifically, 4 types of **lattices** (triangular, **hexagonal**, square, and rectangular) and 5 different shapes of scatterers (hexagon, circle, square, rectangle, and ellipse) are considered. The scatterers are either dielec. rods in air, or air rods in dielec. media. The lattice symmetry and all these properties of the scatterers can affect the band gap size. Given a lattice symmetry, the largest abs. photonic band gap is achieved by selecting a scatterer of the same symmetry; e.g., hexagonal rods in triangular or honeycomb lattices, square rods in square lattices, and rectangular rods in rectangular lattices. The band gap can be further maximized by adjusting the orientation and size of the scatterers; but no simple, systematic rules can be drawn.
ST shape orientation scatterer photonic band gap
IT Band structure
Photonic crystals
Photonics
(effects of shapes and orientations of scatterers and **lattice** symmetries on **photonic** band gap in two-dimensional photonic crystals)
IT Band gap
(photonic; effects of shapes and orientations of scatterers and **lattice** symmetries on **photonic** band gap in two-dimensional photonic crystals)
RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Anderson, C; Phys Rev B 1997, V56, P7313 CA
(2) Anderson, C; Phys Rev Lett 1996, V77, P2949 CA
(3) Anon; International Tables for Crystallography 1987
(4) Anon; J Opt Soc Am B 1993, V10, P208
(5) Baba, T; Jpn J Appl Phys Part 1 1995, V34, P4496 CAPLUS
(6) Bullock, D; J Opt Soc Am B 1993, V10, P399 CA
(7) Cassagne, D; Phys Rev B 1996, V53, P7134 CA
(8) Ho, K; Phys Rev Lett 1990, V65, P3152 CA
(9) Joannopouls, J; Nature 1997, V386, P143
(10) Joannopouls, J; Photonic Crystals: Molding the Flow of light 1995
(11) John, S; Phys Rev A 1994, V50, P1764 CA
(12) John, S; Phys Rev B 1991, V43, P12772
(13) John, S; Phys Rev Lett 1987, V58, P2486 CA
(14) Kee, C; Phys Rev E 1997, V56, P6291
(15) Leung, K; Phys Rev Lett 1990, V65, P2646 CA
(16) Li, Z; Phys Rev Lett 1998, V81, P2574 CAPLUS
(17) Padjen, R; J Mod Opt 1994, V41, P295 CA
(18) Qiu, M; Phys Rev B 1999, V60, P10610 CAPLUS
(19) Villeneuve, P; Phys Rev B 1992, V46, P4969
(20) Villeneuve, P; Phys Rev B 1992, V46, P4973
(21) Wang, X; Phys Rev B 1999, V60, P11417 CA
(22) Yablonovitch, E; Phys Rev Lett 1987, V58, P2059 CA

(23) Zhu, S; Phys Rev Lett 1997, V79, P205 CA

L6 ANSWER 2 OF 3 CA
AN 127:323946 CA
TI Experimental demonstration of complete photonic band gap in graphite structure
AU Gadot, F.; Chelnokov, A.; De Lustrac, A.; Crozat, P.; Lourtioz, J.-M.; Cassagne, D.; Jouanin, C.
CS Institut d'Electronique Fondamentale, Universite de Paris-Sud, Orsay Cedex, 91405, Fr.
SO Applied Physics Letters (1997), 71(13), 1780-1782
CODEN: APPLAB; ISSN: 0003-6951
PB American Institute of Physics
DT Journal
LA English
CC 73-3 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

material is not-OK

AB We exptl. demonstrate the existence of complete photonic band gap in graphite-type photonic crystals, thereby confirming theor. predictions reported in previous studies. Expts. were performed at microwave frequencies from 27 to 75 GHz using two-dimensional **hexagonal lattices** of alumina rods. Transmission spectra measured for E (TM) and H (TE) polarizations and for different orientations of the two-dimensional lattice are in excellent agreement with numerical calcns. The complete photonic band gap results from the overlap of E7 and H5 forbidden bands. Attenuations larger than 30 dB are measured for structures comprised of only four rows of alumina rods.
ST microwave photonic band gap hexagonal lattice; alumina hexagonal **lattice photonic** band gap
IT Band structure
(microwave photonic band gap in hexagonal lattice of alumina rods)
IT Band gap
(photonic; microwave photonic band gap in hexagonal lattice of alumina rods)
IT Microwave spectra
(polarized; microwave photonic band gap in hexagonal lattice of alumina rods)
IT 1344-28-1, Alumina, properties
RL: PRP (Properties)
(microwave photonic band gap in hexagonal lattice of alumina rods)

L6 ANSWER 3 OF 3 CA
AN 126:310137 CA
TI Photopumped laser operation of an oxide post GaAs-AlAs superlattice **photonic lattice**
AU Evans, P. W.; Wierer, J. J.; Holonyak, N., Jr.
CS Elec. Eng. Res. Lab., Univ. Illinois Urbana-Champaign, Urbana, IL, 61801, USA
SO Applied Physics Letters (1997), 70(9), 1119-1121
CODEN: APPLAB; ISSN: 0003-6951
PB American Institute of Physics
DT Journal
LA English
CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

DUPLICATE

AB Data are presented on the laser operation of photoexcited active **hexagonal photonic lattices** consisting of a GaAs-AlAs superlattice slab waveguide patterned with Zn-disordered AlGaAs posts that are converted to oxide. The semiconductor-oxide-post **photonic lattice** structure lases without the benefit of cleaved edges or other reflecting interfaces owing to strong local optical feedback provided by the high refractive index contrast between oxide posts and the active GaAs-AlAs superlattice. As the pump area is increased at const. pump power, the threshold intensity decreases as

higher Q modes in an effectively larger cavity are excited. Similar **hexagonal photonic lattices** with nonoxidized posts (disordered AlGaAs posts) operate as lasers, but only with the assistance of cleaved edges and by shifting to longer wavelength. The oxide post **photonic lattice** is compatible with current-driven **photonic lattice** lasers or active filters.

ST aluminum gallium arsenide oxide post laser

IT Lasers
Optical waveguides
(photopumped laser operation of oxide post GaAs-AlAs superlattice **photonic lattice**)

IT 106070-10-4, Aluminum gallium arsenide (Al0.7Ga0.3As)
RL: DEV (Device component use); USES (Uses)
(photopumped laser operation of oxide post GaAs-AlAs superlattice **photonic lattice**)

IT 7440-66-6, Zinc, uses
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(photopumped laser operation of oxide post GaAs-AlAs superlattice **photonic lattice**)

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     FILE 'INSPEC' ENTERED AT 18:21:31 ON 24 JUN 2003
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L2          379 HEXAGONAL (2A)LATTICES
L3         1204 4 (2A)LATTICE
L4          235 PHOTONIC (2A)LATTICE#
L5            3 L2 AND L4

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L6            3 L5

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L2          379 HEXAGONAL (2A)LATTICES
L3         1204 4 (2A)LATTICE
L4          235 PHOTONIC (2A)LATTICE#
L5            3 L2 AND L4

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L6            3 L5
L7            3 L6
L8        44274 RODS

     FILE 'CA' ENTERED AT 18:33:44 ON 24 JUN 2003
L9        44274 RODS
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L11          22 L10 AND L9
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